AMENDMENT

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the subject application:

Listing of Claims:

1. (Currently Amended) A system for sensing and compensating for at least one error signal, the system comprising:

an acoustic pick-up device having a first microphone disposed at a first distance from a desired acoustic source, and a second microphone disposed at a second distance from the desired acoustic source, each of the first microphone and the second microphone receiving acoustic signals generated from the desired acoustic source, and in response, transducing the acoustic signals into audio signals;

a position estimation circuit coupled to receive the audio signals from the first microphone and the second microphone, and adapted to produce, from the audio signals of both first and second microphones, ~~therefrom~~ an error signal to indicate angular and/or distance mispositioning of the acoustic pick-up device relative to the desired acoustic source that results in the acoustic signals received by the acoustic pick-up device failing to achieve proper or adequate noise cancellation and resulting in the audio signals being degraded; and

a controller using the error signal to compensate for the acoustic pick-up device being mispositioned by providing the audio signals from at least one of the first microphone and the second microphone to an output.

2. (Previously Presented) The system according to Claim 1, further comprising an indicator utilizing the error signal to generate an indication of the acoustic pick-up device being mispositioned.

3. (Original) The system according to Claim 1, wherein the error signal is determined after the audio signals are received by the position estimation circuit.

4. (Original) The system according to Claim 1, wherein the first microphone and the second microphone are both omnidirectional microphones.

5. (Original) The system according to Claim 4, further comprising a noise canceling microphone signal adapted from a difference between the audio signals received from the first microphone and the audio signals received from the second microphone.

6. (Original) The system according to Claim 1, wherein the controller includes a switch transferring the audio signals from one of the first and the second microphones to the output.

7. (Original) The system according to Claim 1, wherein the controller includes a switch transferring a combined signal to the output, the combined signal generated from a difference between the audio signals received from the first microphone and the audio signal received from the second microphone.

8. (Original) The system according to Claim 1, wherein the controller includes:

a device adapted to produce a combined signal based on the audio signals received from the first and the second microphones, wherein the error signal is used to select the combined signal to be transmitted to the output.

9. (Original) The system according to Claim 8, wherein the device comprises a summing unit.

10. (Previously Presented) The system according to Claim 1, wherein the position estimation circuit comprises a sensor capable of determining the acoustic pick-up device being mispositioned.

11. (Original) The system according to Claim 1, wherein the controller includes:

a programmable phase shift network adapted to produce a range of phase shifts in the audio signals from the second microphone; and

a device producing a combined signal based on those signals being phase shifted and on the audio signals received from the first microphone, the device being further capable of transferring the combined signal to the output.

12. (Original) The system according to Claim 11, wherein the device comprises a summing unit.

13. (Original) The system according to Claim 1, wherein the first microphone is disposed closer to the desired acoustic source than the second microphone.

14. (Previously Presented) The system according to Claim 1, wherein the position estimation circuit comprises:

a device determining whether the desired acoustic source is operational; and

coupled to the device, a sensor determining that the acoustic pick-up device is mispositioned.

15. (Previously Presented) The system according to Claim 14, wherein the audio signals from at least one of the first microphone and the second microphone are provided to the output when the acoustic source is operational and when the sensor determines that the acoustic pick-up device is mispositioned according to a predetermined threshold that is exceeded.

16. (Previously Presented) The system according to Claim 14, wherein the position estimation circuit further comprises:

a first circuit determining progressive levels of the acoustic pick-up device being mispositioned with respect to the desired acoustic source; and

a second circuit determining a corresponding phase shift based on a particular one of the progressive levels determined, said corresponding phase shift being introduced with the audio signals received from the second microphone to produce delayed signals, the delayed signals being subtracted from the audio signals received from the first microphone with a result provided to the output.

17. (Original) The system according to Claim 16, wherein first circuit comprises a multi-level comparator, and the second circuit comprises a state machine coupled to the multi-level comparator.

18. (Original) The system according to Claim 16, wherein the corresponding phase shift causes a directional response of a combination of the first and second microphones to include one of a figure eight pattern, a cardioid pattern, a hypercardioid pattern, and an omnidirectional pattern.

19. (Currently Amended) A system for controlling a directional response of at least one of a first microphone and a second microphone, the system comprising:

first microphone means disposed at a first distance from a desired acoustic source;

second microphone means disposed at a second distance from the desired acoustic source, each of the first microphone means and the second microphone means receiving acoustic signals generated from the desired acoustic source, and in response thereto, transducing the acoustic signals into audio signals;

position estimation means coupled to receive the audio signals from the first and second microphone means, the position estimation means being adapted to produce, from the audio signals of both first and second microphones, ~~therefrom~~ an error signal that indicates angular and/or distance mispositioning of the first and second microphone means relative to the desired acoustic source that results in the acoustic signals received by the acoustic pick-up device failing to achieve proper or adequate noise cancellation and resulting in the audio signals being degraded; and

control means using the error signal to compensate for the first and second microphone means being mispositioned by providing the audio signals from at least one of the first and second microphone means to an output.

20. (Original) The system according to Claim 19, wherein said control means adjusts a polar pattern of the audio signals received from the first and second microphone means to provide the audio signals to the output.

21. (Original) The system according to Claim 20, wherein the audio signals provided to the output include noise canceling as a result of a combination of the audio signals from the first and second microphone means.

22. (Currently Amended) A method of controlling a directional response of at least one of a first and second microphones, the method comprising:

receiving acoustic signals generated by a desired acoustic source at a first microphone;

receiving the acoustic signals at a second microphone;

in response, the first and second microphones each transducing the acoustic signals respectively received into audio signals;

detecting an error signal amongst the audio signals from both first and second microphones, the error signal indicates angular and/or distance mispositioning of the first and second microphones relative to the desired acoustic source that results in the acoustic signals received by the acoustic pick-up device failing to achieve proper or adequate noise cancellation and resulting in the audio signals being degraded;

using the error signal to select the directional response corresponding to at least one of the first and second microphones in order to compensate for the first and second microphones being mispositioned; and

providing the audio signals associated with the directional response selected to an output.

23. (Original) The method according to Claim 22, wherein the audio signals provided to the output are a result of noise canceling generated by a difference between the audio signals associated with the first microphone and the audio signals associated with the second microphone.

24. (Previously Presented) The method according to Claim 22, further comprising

activating an indicator in response to receiving the error signal to indicate the first and second microphones being mispositioned with respect to the desired acoustic source.

25. (Original) The method according to Claim 22, wherein the first and second microphones each comprises an omnidirectional microphone.

26. (Previously Presented) The method according to Claim 22, further comprising:

determining progressive levels of the first and second microphones being mispositioned with respect to the desired acoustic source;

determining a corresponding phase shift based on a particular one of the progressive levels associated with the error;

introducing the corresponding phase shift with the audio signals associated with the second microphone to produce delayed signals;

providing at the output the delayed signals combined with the audio signals associated with the first microphone.

27. (Original) The method according to Claim 22, wherein the directional response comprises one of a figure eight pattern, a cardioid pattern, a hypercardioid pattern, and an omnidirectional pattern.

28. (Currently Amended) A method of sensing and compensating for an error, the method comprising:

receiving acoustic signals generated by a desired acoustic source at a first microphone;

receiving the acoustic signals at a second microphone;

in response, the first and second microphones each transducing the acoustic signals respectively received into audio signals;

detecting an error signal amongst the audio signals associated with both the first and second microphones, the error signal indicates angular and/or distance mispositioning of the first and second microphones relative to the desired acoustic source that results in the acoustic signals received by the acoustic pick-up device failing to achieve proper or adequate noise cancellation and resulting in the audio signals being degraded; and

using the error signal to selectively provide the audio signals from at least one of the first and second microphones to an output in order to compensate for the mispositioning.

29. (Original) The method according to Claim 28, wherein the audio signals provided to the output include noise canceling as a result of a combination of the first and second microphones.

30. (Original) The method according to Claim 28, wherein using the error signal to selectively provide the audio signals from at least one of the first and second microphones to an output comprises adjusting a directional response of at least one of the first and second microphones.

31. (Original) The method according to Claim 30, wherein the directional response comprises one of a figure eight pattern, a cardioid pattern, a hypercardioid pattern, and an omnidirectional pattern.

32. (Original) The method according to Claim 30, wherein the directional response comprises one of a figure eight pattern, and an omnidirectional pattern.

33. (Original) The method according to Claim 28, wherein detecting an error signal comprises:

determining whether the desired acoustic source is operational; and

determining whether the first and second microphones are mispositioned relative to the desired acoustic source.